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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,120	02/24/2006	Troy Blagden	AUT0101PUSA	2977
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EXAMINER				
SOHN, SEUNG C				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,120

Applicant(s)

BLAGDEN, TROY

Examiner

SEUNG C. SOHN

Art Unit

2878

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 7, 2008 has been entered.

Drawings

1. Figure 1 should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, **the "collimator" in**

claims 1-2 and “source” in claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. ***Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph***, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **Regarding claims 1-2**, the description, at the time the application was filed, does not disclose "the collimator whereby the path length from all parts of the flow to said optical element is substantially constant as a consequence of the collimated monolayer flow".
6. ***Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph***, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. **Regarding claims 1-2**, the description does not disclose as to how the collimator makes the material flow as an annular, substantially monolayer concentric particulate flow.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. ***Claims 1-2, 4-5, 10 and 12-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Roberts (Patent No. US 3,009,571).***

In regard to claim 1, Roberts discloses (fig. 1) a sorting method including the steps of: forming an at least part annular flow of particulate material by axially flowing said particulate material over dispersion member having a substantially conical flow surface bounded by an axially perpendicular peripheral edge whereby product flow is directed substantially in a monolayer from said edge passing through a collimator comprising of opposed inner and outer guides in a nested, coaxial, opposed and frusto conical, arrangement to form an annular, concentric monolayer product flow (column 1, line 67 - column 2, line 18); operating a detector (68) substantially centered within said annular flow downstream of said body member and selected to apply a sorting criterion on the particles in said flow; and operating a sorting means (118) responsive to said detector to sort particles in said flow according to said criterion (column 3, line 72 - column 4, line 18; column 4, line 66 - column 5, line 35).

In regard to claim 2, Roberts discloses (fig. 1) a sorting apparatus including: a dispersion member having a substantially conical surface bounded by an axially perpendicular peripheral edge; a supply of a particulate material to said flow surface,

said supply being selected whereby said particulate material axially passes from said edge forming an at least part annular flow (column 1, line 67 - column 2, line 18); a collimator for receiving the material passing downstream from the peripheral edge comprising of opposed inner and outer guides in a nested, coaxial, and frustoconical arrangement, forming an annular, substantially monolayer concentric particulate flow; a detector (68) substantially centered within said annular flow downstream of on the particles in said flow the collimator whereby the path length from all parts of the flow to said optical element is substantially constant as a consequence of the collimated monolayer flow, said detector being selected to apply a sorting criterion on the particles in said bulk flow; and sorting means (118) responsive to said detector to sort particles in said flow according to said criterion (column 3, line 72 - column 4, line-18; column 4, line 66 - column 5, line 35).

In regard to claim 4, Roberts discloses (fig. 1) that the material flow downstream of the collimator is substantially vertical.

In regard to claim 5, Roberts discloses (fig. 1) that the particulate flow is irradiated by an actual or effectively rotating source, and that the detector detects the intensity of the reflected or transmitted component of the radiation (column 2, lines 39-45). Note, because Roberts discloses an annular array of lights, the source is an "effectively rotating source."

In regard to claim 10, Roberts discloses (fig. 1) that the detected light is polychromatic (column 2, lines 39-45).

In regard to claim 12, Roberts discloses (fig. 1) that the detection elements are selected from photo multipliers, CCD arrays or like photoelectric sensitive measuring devices (column 3, lines 72 - column 4, line 15).

In regard to claim 13, Roberts discloses (fig. 1) that the sorting means comprises one or more rejecters responsive to said detector and adapted to impinge upon a selected particle to displace said particle from said flow (column 4, line 66 - column 5, line 35).

In regard to claim 14, Roberts discloses (fig. 1) that the one or more rejecters each comprise means to generate an air blast which rejects a detected particle from the particulate flow in response to a signal generated in response to detection by said detector (column 4, line 66 - column 5, line 35).

In regard to claim 15, Roberts discloses (fig. 1) that the rejecters comprise an annular manifold containing a single row of air valves, each valve facing approximately 90 degrees to the particulate flow, substantially parallel to the product flow and offset with a clearance gap therefrom (column 4, line 66 - column 5, line 35).

In regard to claim 16, Roberts discloses (fig. 1) that the rejecters comprise a plurality of annular manifolds each containing a single row of air valves, each valve facing approximately 90 degrees to the particulate flow, substantially parallel to the product flow and offset with a clearance gap therefrom, and wherein said air valves are aligned between the rows in the direction of said flow, whereby aligned air valves are operated sequentially to impact a selected particle sequentially (column 4, line 66 - column 5, line 35).

In regard to claims 17 and 20, Roberts discloses (fig. 1) a sorting method including: forming an at least part annular flow of material (column 1, line 67 - column 2, line 18); detecting by a detector radiation from the material in the at least part annular flow, the radiation from substantially all parts of the flow having traveled substantially the same distance from the annular flow to the detector; and operating a sorting mechanism in response to the detected radiation to sort the material in the flow (column 3, line 72 - column 4, line 18; column 4, line 66 - column 5, line 35). The apparatus of claim 20 is inherently taught by the method set forth above because the elements are necessarily included for the method to function as claimed.

In regard to claims 18 and 21, Roberts discloses that the radiation received by an optical element locked substantially centrally with respect to the at least part annular flow, and wherein the optical element directs the radiation to the detector (column 3, line 72 - column 4, line 18).

In regard to claims 19 and 22, Roberts discloses that the optical element includes a rotatable mirror (column 2, lines 55-66).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (Patent No. US 3,009,571).

In regard to claim 6, Roberts discloses (fig. 1) a light source as set forth above. Roberts fails to disclose using a monochromatic light source. However, it is well known in the art to use a monochromatic light source to measure the intensity of reflected light. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a monochromatic light source in order to more accurately detect the light intensity by eliminating wavelengths outside the band of interest.

In regard to claim 7, Roberts discloses (fig. 1) that the reflected light is filtered (67) to remove wavelengths outside a specific group of wavelengths (column 3, lines 67-71). Roberts fails to disclose removing all other wavelengths than the required wavelength to render the detected signal monochromatic. However, it is well known in the art to only allow a single wavelength of light to be detected by a detector. It would have been obvious to one of ordinary skill in the art at the time the invention was made to only allow a monochromatic band of light in order to more accurately detect the light intensity solely from the light source.

In regard to claim 8, Roberts discloses (fig. 1) that the filtering is performed using one or more band pass optical filters that transmit only the required wavelength bands (column 3, lines 67-71).

In regard to claim 9, Roberts discloses (fig. 1) a filtering process. Roberts fails to disclose that the filtering is performed using one or more band reject optical filters that reflect only the required wavelength bands. However, it is well known in the art to

interchange band pass and band reject filters. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the band pass filter of Roberts with a band reject filter in order to configure the system as desired.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (Patent No. US 3,009,571) in view of Guenard et al. (Patent No. US 6,855,901).

In regard to claim 11, Roberts discloses an embodiment (fig. 5) using a polychromatic light source and means (205, 206,207, and 208) to spectrally resolve the light to a plurality of detection elements (201,202). Roberts fails to disclose using a diffractive grating to resolve the light. However, Guenard teaches that a diffraction grating can be used interchangeably with multiple filters in a spectroscopic sorting apparatus (column 4, lines 15-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a diffractive grating to resolve the light in order to more efficiently transmit each part of the spectrum to its respective detector.

Response to Arguments

12. Applicant's arguments filed on May 7, 2008 have been fully considered but they are not persuasive. The amended independent claims 1-2 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Also, The amended independent claims 1-2

contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEUNG C. SOHN whose telephone number is (571)272-4123. The examiner can normally be reached on Mon-Thur, 7:30 AM -6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GEORGIA Y. EPPS can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/SEUNG C SOHN/

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